

CLAIMS

1. Spherical molding sand produced by a flame fusion method, wherein the spherical molding sand comprises as major components  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ , and has an  $\text{Al}_2\text{O}_3/\text{SiO}_2$  weight ratio of 1 to 15 and an average particle size of 0.05 to 1.5 mm.  
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2. The spherical molding sand according to claim 1, wherein the spherical molding sand has an average particle size of 0.05 to 0.5 mm and a spherical degree of at least 0.95.  
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3. The spherical molding sand according to claim 1, wherein the spherical molding sand has water absorption of at most 0.8% by weight.
4. The spherical molding sand according to claim 1, wherein the spherical molding sand has a spherical degree of at least 0.98.  
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5. Molding sand comprising 50% by volume of the spherical molding sand as defined in claim 4.  
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6. A process for producing the spherical molding sand as defined in claim 1, comprising the step of fusing in flame powdery particles comprising as major components  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ , and having an  $\text{Al}_2\text{O}_3/\text{SiO}_2$  weight ratio of 0.9 to 17 and an average particle size of 0.05 to 2 mm, to form spherical particles.  
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7. A casting mold comprising the spherical molding sand as defined in claim  
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8. A casting mold comprising the spherical molding sand as defined in claim  
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9. A cast product molded by using the mold as defined in claim 7.

10. A cast product molded by using the mold as defined in claim 8.

11. A construction product made of the cast product as defined in claim 9.

12. A construction product made of the cast product as defined in claim 10.

15 13. A spherical molding sand, wherein the spherical molding sand comprises as major components  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ , and has an  $\text{Al}_2\text{O}_3/\text{SiO}_2$  weight ratio of 1 to 15, an average particle size of 0.05 to 1.5 mm and a spherical degree of at least 0.95.

20 14. The spherical molding sand according to claim 13, wherein the spherical molding sand has water absorption of at most 0.8% by weight.

15. The spherical molding sand according to claim 13, wherein the spherical molding sand has a spherical degree of at least 0.98.

16. A molding sand comprising 50% by volume of the spherical molding sand as defined in claim 15.

17. A process for producing the spherical molding sand as defined in claim 13, comprising the step of fusing in flame powdery particles comprising as major components  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ , and having an  $\text{Al}_2\text{O}_3/\text{SiO}_2$  weight ratio of 0.9 to 17 and an average particle size of 0.05 to 2 mm, to form spherical particles.

18. A casting mold comprising the spherical molding sand as defined in claim 13.

19. A casting mold comprising the spherical molding sand as defined in claim 16.

15 20. A cast product molded by using the mold as defined in claim 18.

21. A cast product molded by using the mold as defined in claim 19.

22. A construction product made of the cast product as defined in claim 20.

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23. A construction product made of the cast product as defined in claim 21.